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00140

PATENT TRADEMARK OFFICE

COMBINED DECLARATION AND POWER OF ATTORNEY

(ORIGINAL, DESIGN, NATIONAL STAGE OF PCT, SUPPLEMENTAL, DIVISIONAL,
CONTINUATION, OR C-I-P)

As a below named inventor, I hereby declare that:

TYPE OF DECLARATION

This declaration is of the following type:

(check one applicable item below)

- ☐ original.
☐ design.

NOTE: With the exception of a supplemental oath or declaration submitted in a reissue, a supplemental oath or declaration is not treated as an amendment under 37 CFR 1.312 (Amendments after allowance). M.P.E.P. Section 714.16, 7th Ed.

- ☐ supplemental.

NOTE: If the declaration is for an International Application being filed as a divisional, continuation or continuation-in-part application, do not check next item; check appropriate one of last three items.

- ☒ national stage of PCT.

NOTE: If one of the following 3 items apply, then complete and also attach ADDED PAGES FOR DIVISIONAL, CONTINUATION OR C-I-P.

NOTE: See 37 C.F.R. Section 1.63(d) (continued prosecution application) for use of a prior nonprovisional application declaration in the continuation or divisional application being filed on behalf of the same or fewer of the inventors named in the prior application.

- ☐ divisional.
☐ continuation.

NOTE: Where an application discloses and claims subject matter not disclosed in the prior application, or a continuation or divisional application names an inventor not named in the prior application, a continuation-in-part application must be filed under 37 C.F.R. Section 1.53(b) (application filing requirements-nonprovisional application).

- ☐ continuation-in-part (C-I-P).

INVENTORSHIP IDENTIFICATION

WARNING: *If the inventors are each not the inventors of all the claims, an explanation of the facts, including the ownership of all the claims at the time the last claimed invention was made, should be submitted.*

My residence, post office address and citizenship are as stated below, next to my name. I believe that I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural names are listed below) of the subject matter that is claimed, and for which a patent is sought on the invention entitled:

TITLE OF INVENTION

INSULATED FREIGHT CONTAINER AND A TOP RAIL THEREFOR

SPECIFICATION IDENTIFICATION

The specification of which:

(complete (a), (b), or (c))

(a) ☐ is attached hereto.

NOTE: *"The following combinations of information supplied in an oath or declaration filed on the application filing date with a specification are acceptable as minimums for identifying a specification and compliance with any one of the items below will be accepted as complying with the identification requirement of 37 C.F.R. Section 1.63:*

"(1) name of inventor(s), and reference to an attached specification which is both attached to the oath or declaration at the time of execution and submitted with the oath or declaration on filing;

"(2) name of inventor(s), and attorney docket number which was on the specification as filed; or

"(3) name of inventor(s), and title which was on the specification as filed."

Notice of July 13, 1995 (1177 O.G. 60).

(b) ☐ was filed on _____, ☐ as Application No. _____
☐ and was amended on _____ (if applicable).

NOTE: *Amendments filed after the original papers are deposited with the PTO that contain new matter are not accorded a filing date by being referred to in the declaration. Accordingly, the amendments involved are those filed with the application papers or, in the case of a supplemental declaration, are those amendments claiming matter not encompassed in the original statement of invention or claims. See 37 C.F.R. Section 1.67.*

NOTE: *"The following combinations of information supplied in an oath or declaration filed after the filing date are acceptable as minimums for identifying a specification and compliance with any one of the items below will be accepted as complying with the identification requirement of 37 C.F.R. Section 1.63:*

(A) application number (consisting of the series code and the serial number, e.g., 08/123,456);

(B) serial number and filing date;

(C) attorney docket number which was on the specification as filed;

(D) title which was on the specification as filed and reference to an attached specification which is both attached to the oath or declaration at the time of execution and submitted with the oath or declaration; or

(E) title which was on the specification as filed and accompanied by a cover letter accurately identifying the application for which it was intended by either the application number (consisting of the series code and the serial number, e.g., 08/123,456), or serial number and filing date. Absent any statement(s) to the contrary, it will be presumed that the application filed in the PTO is the application which the inventor(s) executed by signing the oath or declaration.

M.P.E.P. Section 601.01(a), 7th ed.

- (c) [x] was described and claimed in PCT International Application No. PCT/GB00/00059 filed on 12 January 2000 and as amended under PCT Article 19 on _____(if any).

SUPPLEMENTAL DECLARATION (37 C.F.R. Section 1.67(b))

(complete the following where a supplemental declaration is being submitted)

[] I hereby declare that the subject matter of the

[] attached amendment

[] amendment filed on _____.

was part of my/our invention and was invented before the filing date of the original application, above identified, for such invention.

ACKNOWLEDGMENT OF REVIEW OF PAPERS AND DUTY OF CANDOR

I hereby state that I have reviewed and understand the contents of the above-identified specification, including the claims, as amended by any amendment referred to above.

I acknowledge the duty to disclose information, which is material to patentability as defined in 37, Code of Federal Regulations, Section 1.56,

(also check the following items, if desired)

[] and which is material to the examination of this application, namely, information where there is a substantial likelihood that a reasonable Examiner would consider it important in deciding whether to allow the application to issue as a patent, and

[] in compliance with this duty, there is attached an information disclosure statement, in accordance with 37 C.F.R. Section 1.98.

PRIORITY CLAIM (35 U.S.C. Section 119(a)-(d))

NOTE: "The claim to priority need be in no special form and may be made by the attorney or agent if the foreign application is referred to in the oath or declaration as required by Section 1.63. The claim for priority and the certified copy of the foreign application specified in 35 U.S.C. Section 119(b) must be filed in the case of an interference (Section 1.630), when necessary to overcome the date of a reference relied upon by the examiner, when specifically required by the examiner, and in all other situations, before the patent is granted. If the claim for priority or the certified copy of the foreign application is filed after the date the issue fee is paid, it must be accompanied by a petition requesting entry and by the fee set forth in Section 1.17(i). If the certified copy is not in the English language, a translation need not be filed except in the case of interference; or when necessary to overcome the date of a reference relied upon by the examiner; or when specifically required by the examiner, in which event an English language translation must be filed together with a statement that the translation of the certified copy is accurate." 37 C.F.R. Section 1.55(a).

I hereby claim foreign priority benefits under Title 35, United States Code, Section 119(a)-(d) of any foreign application(s) for patent or inventor's certificate or of any PCT international application(s) designating at least one country other than the United States of America listed below and have also identified below any foreign application(s) for patent or inventor's certificate or any PCT international application(s) designating at least one country other than the United States of America filed by me on the same subject matter having a filing date before that of the application(s) of which priority is claimed.

(complete (d) or (e))

- (d) ☐ no such applications have been filed.
 (e) ☒ such applications have been filed as follows.

NOTE: Where item (c) is entered above and the International Application which designated the U.S. itself claimed priority check item (e), enter the details below and make the priority claim.

**PRIOR FOREIGN/PCT APPLICATION(S) FILED WITHIN 12 MONTHS
 (6 MONTHS FOR DESIGN) PRIOR TO THIS APPLICATION
 AND ANY PRIORITY CLAIMS UNDER 35 U.S.C. SECTION 119(a)-(d)**

COUNTRY (OR INDICATE IF PCT)	APPLICATION NUMBER	DATE OF FILING DAY, MONTH, YEAR	PRIORITY CLAIMED UNDER 35 USC 119
GB	9900701.5	13 JANUARY 1999	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO
			<input type="checkbox"/> YES <input type="checkbox"/> NO
			<input type="checkbox"/> YES <input type="checkbox"/> NO
			<input type="checkbox"/> YES <input type="checkbox"/> NO
			<input type="checkbox"/> YES <input type="checkbox"/> NO

CLAIM FOR BENEFIT OF PRIOR U.S. PROVISIONAL APPLICATION(S)
 (35 U.S.C. Section 119(e))

I hereby claim the benefit under Title 35, United States Code, Section 119(e) of any United States provisional application(s) listed below:

PROVISIONAL APPLICATION NUMBER

FILING DATE

_____/_____
 _____/_____
 _____/_____

CLAIM FOR BENEFIT OF EARLIER U.S./PCT APPLICATION(S)
UNDER 35 U.S.C. SECTION 120

- ☐ The claim for the benefit of any such applications are set forth in the attached
 ADDED PAGES TO COMBINED DECLARATION AND POWER OF ATTORNEY
 FOR DIVISIONAL, CONTINUATION OR CONTINUATION-IN-PART (C-I-P)
 APPLICATION.

(check proper box(es) for any of the following added page(s)
that form a part of this declaration)

☐ **Signature** for fourth and subsequent joint inventors. *Number of pages added* _____

* * *

☐ **Signature** by administrator(trix), executor(trix) or legal representative for deceased or incapacitated inventor. *Number of pages added* _____

* * *

☐ **Signature** for inventor who refuses to sign or cannot be reached by person authorized under 37 C.F.R. Section 1.47. *Number of pages added* _____

* * *

☐ Added page for **signature** by one joint inventor on behalf of deceased inventor(s) where legal representative cannot be appointed in time. (37 C.F.R. Section 1.47)

* * *

☐ Added pages to combined declaration and power of attorney for divisional, continuation, or continuation-in-part (C-I-P) application.

☐ Number of pages added _____

* * *

☐ Authorization of practitioner(s) to accept and follow instructions from representative.

(If no further pages form a part of this Declaration,
then end this Declaration with this page and check the following item)

☒ This declaration ends with this page.

09/889207

Practitioner's Docket No. U 013543-1

Optional Customer No. Bar Code



00140

PATENT TRADEMARK OFFICE

CHAPTER II

**TRANSMITTAL LETTER
TO THE UNITED STATES ELECTED OFFICE (EO/US)
(ENTRY INTO U.S. NATIONAL PHASE UNDER CHAPTER II)**

INTERNATIONAL APPLICATION NO.	INTERNATIONAL FILING DATE	PRIORITY DATE CLAIMED
PCT/GB00/00059	12 JANUARY 2000	13 JANUARY 1999

TITLE OF INVENTION

INSULATED FREIGHT CONTAINER AND A TOP RAIL THEREFOR

APPLICANT(S)

ANTHONY BRASSINGTON

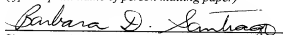
Box PCT
Assistant Commissioner for Patents
Washington D.C. 20231
ATTENTION: EO/US

NOTE: The completion of those filing requirements that can be made at a time later than 30 months from the priority date results from the Commissioner exercising his judgment under the authority granted under 35 USC 371(d). The filing receipt will show the actual date of receipt of the last item completing the entry into the national phase. See 37 C.F.R. §1.491 which states: "An international application enters the national state when the applicant has filed the

CERTIFICATION UNDER 37 C.F.R. 1.10**(Express Mail label number is mandatory.)**(Express Mail certification is optional.)*

I hereby certify that this correspondence and the documents referred to as attached therein are being deposited with the United States Postal Service on this date July 12, 2001, in an envelope as "Express Mail Post Office to Addressee," Mailing Label Number EL 728213897 US, addressed to the: Assistant Commissioner for Patents, Washington, D.C. 20231.

BARBARA D. SANTIAGO

(type or print name of person mailing paper)

 Signature of person mailing paper

WARNING: Certificate of mailing (first class) or facsimile transmission procedures of 37 C.F.R. 1.8 cannot be used to obtain a date of mailing or transmission for this correspondence.

***WARNING:** Each paper or fee filed by "Express Mail" must have the number of the "Express Mail" mailing label placed thereon prior to mailing 37 C.F.R. 1.10(b).
"Since the filing of correspondence under § 1.10 without the Express Mail mailing label thereon is an oversight that can be avoided by the exercise of reasonable care, requests for waiver of this requirement will not be granted on petition." Notice of Oct. 24, 1996, 60 Fed. Reg. 56,439, at 56,442.

(Transmittal Letter to the United States Elected Office (EO/US)—page 1 of 8) 13-18

EXPRESS MAIL LABEL
NO.: EL 728213897 US

§1 491 which states: "An international application enters the national state when the applicant has filed the documents and fees required by 35 USC 371(c) within the periods set forth in § 1 494 and § 1 495."

WARNING: *Where the items are those which can be submitted to complete the entry of the international application into the national phase are subsequent to 30 months from the priority date the application is still considered to be in the international state and if mailing procedures are utilized to obtain a date the express mail procedure of 37 C.F.R. §1.10 must be used (since international application papers are not covered by an ordinary certificate of mailing - See 37 C.F.R. §1 8.*

NOTE: *Documents and fees must be clearly identified as a submission to enter the national state under 35 USC 371 otherwise the submission will be considered as being made under 35 USC 111. 37 C.F.R. § 1.494(f).*

1. Applicant herewith submits to the United States Elected Office (EO/US) the following items under 35 U.S.C. 371:
 - a. ☒ This express request to immediately begin national examination procedures (35 U.S.C. 371(f)).
 - b. ☒ The U.S. National Fee (35 U.S.C. 371(c)(1)) and other fees (37 C.F.R. § 1.492) as indicated below:

2.Fees

CLAIMS FEE	(1) FOR	(2) NUMBER FILED	(3) NUMBER EXTRA	(4) RATE	(5) CALCULATIONS
[]*	TOTAL CLAIMS	17 - 20 =	0	x \$ 18.00 =	\$
	INDEPENDENT CLAIMS	2 - 3 =	0	x \$ 80.00 =	
MULTIPLE DEPENDENT CLAIM(S) (if applicable) + \$270.00					
BASIC FEE**	<input type="checkbox"/> U.S. PTO WAS INTERNATIONAL PRELIMINARY EXAMINATION AUTHORITY Where an International preliminary examination fee as set forth in § 1.482 has been paid on the international application to the U.S. PTO: <input type="checkbox"/> and the international preliminary examination report states that the criteria of novelty, inventive step (non-obviousness) and industrial activity, as defined in PCT Article 33(2) to (4) have been satisfied for all the claims presented in the application entering the national stage (37 CFR 1.492(a)(4)) \$100.00 and the above requirements are not met (37 CFR 1.492(a)(1)) \$690.00 <input checked="" type="checkbox"/> U.S. PTO WAS NOT INTERNATIONAL PRELIMINARY EXAMINATION AUTHORITY Where no international preliminary examination fee as set forth in § 1.482 has been paid to the U.S. PTO, and payment of an international search fee as set forth in § 1.445(a)(2) to the U.S. PTO: <input type="checkbox"/> has been paid (37 CFR 1.492(a)(2)) \$710.00 <input type="checkbox"/> has not been paid (37 CFR 1.492(a)(3)) \$1,000.00 <input checked="" type="checkbox"/> where a search report on the international application has been prepared by the European Patent Office or the Japanese Patent Office (37 CFR 1.492(a)(5)) \$860.00				
	Total of above Calculations				= \$860.00
SMALL ENTITY	Reduction by ½ for filing by small entity, if applicable. Statement may also be filed. (note 37 CFR 1.9, 1.27, 1.28)				-
	Subtotal				\$860.00
	Total National Fee				\$ 860.00
	Fee for recording the enclosed assignment document \$40.00 (37 CFR 1.21(h)). (See Item 13 below). See attached "ASSIGNMENT COVER SHEET".				
TOTAL	Total Fees enclosed				\$860.00

*See attached Preliminary Amendment Reducing the Number of Claims.

- i. ☒ [X] A check in the amount of \$860.00 to cover the above fees is enclosed.
ii. ☐ [] Please charge Account No. _____ in the amount of \$ _____.
A duplicate copy of this sheet is enclosed.

****WARNING:** "To avoid abandonment of the application the applicant shall furnish to the United States Patent and Trademark Office not later than the expiration of 30 months from the priority date: * * * (2) the basic national fee (see § 1.492(a)). The 30-month time limit may not be extended." 37 C.F.R. § 1.495(b).

WARNING. If the translation of the international application and/or the oath or declaration have not been submitted by the applicant within thirty (30) months from the priority date, such requirements may be met within a time period set by the Office. 37 C.F.R. § 1.495(b)(2). The payment of the surcharge set forth in § 1.492(e) is required as a condition for accepting the oath or declaration later than thirty (30) months after the priority date. The payment of the processing fee set forth in § 1.492(f) is required for acceptance of an English translation later than thirty (30) months after the priority date. Failure to comply with these requirements will result in abandonment of the application. The provisions of § 1.136 apply to the period which is set. Notice of Jan. 3, 1993, 1147 O.G. 29 to 40.

3. ☒ [X] A copy of the International application as filed (35 U.S.C. 371(c)(2)):

NOTE. Section 1.495 (b) was amended to require that the basic national fee and a copy of the international application must be filed with the Office by 30 months from the priority date to avoid abandonment "The International Bureau normally provides the copy of the international application to the Office in accordance with PCT Article 20. At the same time, the International Bureau notifies applicant of the communication to the Office. In accordance with PCT Rule 47.1, that notice shall be accepted by all designated offices as conclusive evidence that the communication has duly taken place. Thus, if the applicant desires to enter the national stage, the applicant normally need only check to be sure the notice from the International Bureau has been received and then pay the basic national fee by 30 months from the priority date." Notice of Jan. 7, 1993, 1147 O.G. 29 to 40, at 35-36. See item 14c below

- a. ☐ [] is transmitted herewith.
b. ☐ [] is not required, as the application was filed with the United States Receiving Office.
c. ☒ [X] has been transmitted
i. ☒ [X] by the International Bureau.
Date of mailing of the application (from form PCT/IB/308): _____.
ii. ☐ [] by applicant on _____
Date

4. ☒ [X] A translation of the International application into the English language (35 U.S.C. 371(c)(2)):
a. ☐ [] is transmitted herewith.
b. ☒ [X] is not required as the application was filed in English.
c. ☐ [] was previously transmitted by applicant on _____
Date
d. ☐ [] will follow.

10. [X] An oath or declaration of the inventor (35 U.S.C. 371(c)(4)) complying with 35 U.S.C. 115
- a. [] was previously submitted by applicant on _____.
 Date
- b. [] is submitted herewith, and such oath or declaration
- i. [] is attached to the application.
- ii. [] identifies the application and any amendments under PCT Article 19 that were transmitted as stated in points 3(b) or 3(c) and 5(b); and states that they were reviewed by the inventor as required by 37 C.F.R. 1.70.
- c. [X] will follow.

Other document(s) or information included:

11. [X] An International Search Report (PCT/ISA/210) or Declaration under PCT Article 17(2)(a):
- a. [X] is transmitted herewith.
- b. [] has been transmitted by the International Bureau.
 Date of mailing (from form PCT/IB/308): _____.
- c. [] is not required, as the application was searched by the United States International Searching Authority.
- d. [] will be transmitted promptly upon request.
- e. [] has been submitted by applicant on _____.
 Date
12. [X] An Information Disclosure Statement under 37 C.F.R. 1.97 and 1.98:
- a. [] is transmitted herewith.
 Also transmitted herewith is/are:
 [] Form PTO-1449 (PTO/SB/08A and 08B).
 [] Copies of citations listed.
- b. [X] will be transmitted within THREE MONTHS of the date of submission of requirements under 35 U.S.C. 371(c).
- c. [] was previously submitted by applicant on _____.
 Date
13. [] An assignment document is transmitted herewith for recording.

A separate [] "COVER SHEET FOR ASSIGNMENT (DOCUMENT) ACCOMPANYING NEW PATENT APPLICATION" or [] FORM PTO 1595 is also attached.

14. [X] Additional documents:
- a. [] Copy of request (PCT/RO/101)
 - b. [X] International Publication No. WO 00/41952
 - i. [X] Specification, claims and drawing
 - ii. [] Front page only
 - c. [X] Preliminary amendment (37 C.F.R. § 1.121)
 - d. [X] Other

FORM PCT/IPEA/408 (WRITTEN OPINION)

15. [X] The above checked items are being transmitted
- a. [X] before 30 months from any claimed priority date.
 - b. [] after 30 months.
16. [] Certain requirements under 35 U.S.C. 371 were previously submitted by the applicant on _____, namely:
- _____
- _____
- _____

AUTHORIZATION TO CHARGE ADDITIONAL FEES

WARNING: *Accurately count claims, especially multiple dependent claims, to avoid unexpected high charges if extra claims are authorized.*

NOTE: *"A written request may be submitted in an application that is an authorization to treat any concurrent or future reply, requiring a petition for an extension of time under this paragraph for its timely submission, as incorporating a petition for extension of time for the appropriate length of time. An authorization to charge all required fees, fees under § 1.17, or all required extension of time fees will be treated as a constructive petition for an extension of time in any concurrent or future reply requiring a petition for an extension of time under this paragraph for its timely submission. Submission of the fee set forth in § 1.17(a) will also be treated as a constructive petition for an extension of time in any concurrent reply requiring a petition for an extension of time under this paragraph for its timely submission." 37 C.F.R. § 1.136(a)(3).*

NOTE: *"Amounts of twenty-five dollars or less will not be returned unless specifically requested within a reasonable time, nor will the payer be notified of such amounts, amounts over twenty-five dollars may be returned by check or, if requested, by credit to a deposit account." 37 C.F.R. § 1.26(a).*

- [X] The Commissioner is hereby authorized to charge the following additional fees that may be required by this paper and during the entire pendency of this application to Account No. 12-0425.

[X] 37 C.F.R. 1.492(a)(1), (2), (3), and (4) (filing fees)

WARNING: *Because failure to pay the national fee within 30 months without extension (37 C.F.R. § 1.495(b)(2)) results in abandonment of the application, it would be best to always check the above box.*

[] 37 C.F.R. 1.492(b), (c) and (d) (presentation of extra claims)

NOTE: *Because additional fees for excess or multiple dependent claims not paid on filing or on later presentation must*

09/889207

JC18 Rec'd PCT/PTO 12 JUL 2001

only be paid or these claims cancelled by amendment prior to the expiration of the time period set for response by the PTO in any notice of fee deficiency (37 C.F.R. § 1.492(d)), it might be best not to authorize the PTO to charge additional claim fees, except possible when dealing with amendments after final action.

- ☒ 37 C.F.R. 1.17 (application processing fees)
☒ 37 C.F.R. 1.17(a)(1)-(5)(extension fees pursuant to § 1.136(a).
☒ 37 C.F.R. 1.18 (issue fee at or before mailing of Notice of Allowance, pursuant to 37 C.F.R. 1.311(b))

NOTE: Where an authorization to charge the issue fee to a deposit account has been filed before the mailing of a Notice of Allowance, the issue fee will be automatically charged to the deposit account at the time of mailing the notice of allowance. 37 C.F.R. § 1.311(b).

NOTE: 37 C.F.R. 1.28(b) requires "Notification of any change in loss of entitlement to small entity status must be filed in the application . . . prior to paying, or at the time of paying . . . issue fee." From the wording of 37 C.F.R. § 1.28(b): (a) notification of change of status must be made even if the fee is paid as "other than a small entity" and (b) no notification is required if the change is to another small entity.

- ☐ 37 C.F.R. § 1.492(e) and (f) (surcharge fees for filing the declaration and/or filing an English translation of an International Application later than 30 months after the priority date).


 SIGNATURE OF PRACTITIONER

WILLIAM R. EVANS

(type or print name of practitioner)

Reg. No.: 25,858

LADAS & PARRY

P.O. Address

Tel. No.: (212)708-1930

Customer No.: 00140

 26 WEST 61ST STREET

NEW YORK, N.Y. 10023

JC18 Rec'd PCT/PTO 1 2 JUL 2001

PATENT**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

In re application of: ANTHONY BRASSINGTON

For: INSULATED FREIGHT CONTAINER AND A TOP RAIL THEREFOR

Attorney Docket No.: U 013543-1

**Assistant Commissioner for Patents
Washington, D.C. 20231**

Sir:

PRELIMINARY AMENDMENT

Please amend the above identified application as follows:

IN THE CLAIMS

Cancel Claims 1-5.

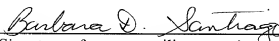
Please add new Claims 6-22.

CERTIFICATE UNDER 37 1.10

I hereby certify that this paper is being deposited with the United States Postal Service on this date JULY 12, 2001 in an envelope as "EXPRESS MAIL POST OFFICE TO ADDRESSEE" Mailing Label Number EL 728213897 US addressed to the: Commissioner of Patents and Trademarks, Washington, D.C. 20231

BARBARA D. SANTIAGO

(Type or print name of person mailing paper)


(Signature of person mailing paper)

NOTE: Each paper or fee referred to as enclosed herein has the number of the "EXPRESS MAIL" mailing label place thereon prior to mailing 37 CFR 1.16(b).

**EXPRESS MAIL LABEL
NO.: EL 728213897 US**

6. (new) A top rail for an insulated double-skinned freight container, the rail being for forming a junction between an outer skin of a side wall and an outer skin of a roof panel of the container, wherein the rail comprises a first portion for attachment to the side wall, an angled second portion at a first obtuse angle to the first portion and adapted to be angled inwardly of the container in use and a third portion for attachment to the roof panel angled at a second obtuse angle to the angled portion so that the third portion is substantially perpendicular to the first portion, the rail being adapted to be welded to at least one of the

7. (new) A top rail as claimed in claim 6, wherein the rail is made of aluminium.

8. (new) A top rail as claimed in claim 6, wherein the top rail has a return section substantially perpendicular to the third portion at an edge of the third portion remote from the angled portion, the return section being adapted to be disposed inwardly of the container in use.

9. (new) A top rail as claimed in claim 6, wherein the first obtuse angle is between 140 degrees and 160 degrees.

10. (new) An insulated freight container having a top rail, the top rail forming a junction between an outer skin of a side wall and an outer skin of a roof panel of the container, wherein the rail comprises a first portion for attachment to the side wall, an angled second portion which is angled at a first obtuse angle to the first portion and angled inward of the container and a third portion attached to the roof and angled at a second obtuse angle to the angled portion so that the third portion is substantially perpendicular to the first portion

and the rail is welded to at least one of the outer skin of the side panel and the outer skin of the roof panel.

11. (new) An insulated freight container as claimed in claim 10, wherein the rail and/or the outer skin of the side panel and/or the outer skin of the roof panel are of aluminium.

12. (new) An insulated freight container as claimed in claim 10, wherein the top rail has a return section substantially perpendicular to the third portion located at an edge of the third portion remote from the angled portion and disposed inwardly of the container.

13. (new) An insulated freight container as claimed in claim 10, wherein the first obtuse angle is between 140 degrees and 160 degrees.

14. (new) A method of manufacturing an insulated double-skinned freight container comprising the steps of:

- a) providing an outer and inner skin of a floor panel,
- b) locating the inner skin of the floor panel parallel to and spaced from the outer skin by foam spacing stanchions,
- c) injecting foam between the inner and outer skins,
- d) providing outer and inner skins of side panels, locating the inner skins parallel to the respective outer skin and spaced from them by foam spacing stanchions, inserting foam between the inner and outer skins,
- e) fixing an edge of the side panels to the floor panel by a known

method to form side walls of the container and filling with foam joints between the floor panel and side panels,

f) providing top rails having a first portion for attachment to each side wall respectively, an angled second portion at a first obtuse angle to the first portion and adapted to be angled inwardly of the container in use and a third portion for attachment to a roof panel, angled at a second obtuse angle to the angled portion so that the third portion is substantially perpendicular to the first portion,

g) riveting said top rails to the outer skins of the side walls respectively, fixing with a known method an inner skin of the roof panel to the inner skins of the side walls respectively,

h) welding an outer skin of the roof panel to the third portion of the top rail and filling the space between the inner and outer skins of the roof panel with foam. outer skin of the side panel and the outer skin of the roof panel.

15. (new) A top rail as claimed in claim 7, wherein the top rail has a return section substantially perpendicular to the third portion at an edge of the third portion remote from the angled portion, the return section being adapted to be disposed inwardly of the container in use.

16. (new) A top rail as claimed in claim 7, wherein the first obtuse angle is between 140 degrees and 160 degrees.

17. (new) A top rail as claimed in claim 8, wherein the first obtuse angle is between 140 degrees and 160 degrees.

18. (new) A top rail as claimed in claim 15, wherein the first obtuse angle is between 140 degrees and 160 degrees.

19. (new) An insulated freight container as claimed in claim 11, wherein the top rail has a return section substantially perpendicular to the third portion located at an edge of the third portion remote from the angled portion and disposed inwardly of the container.

20. (new) An insulated freight container as claimed in claim 11, wherein the first obtuse angle is between 140 degrees and 160 degrees.

21. (new) An insulated freight container as claimed in claim 12, wherein the first obtuse angle is between 140 degrees and 160 degrees.

22. (new) An insulated freight container as claimed in claim 19, wherein the first obtuse angle is between 140 degrees and 160 degrees.

Respectfully submitted,



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INSULATED FREIGHT CONTAINER AND A TOP RAIL THEREFOR

This invention relates to an insulated freight container and to a top rail therefor.

A known insulated freight container has an inner and outer skin with an interstitial space between the skins filled with an insulating solidified foam. The outer skin is typically of aluminium and the inner skin of stainless steel. The outer roof skin and outer side skin are connected together by an extruded top rail. As shown in figure 1, the top rail 100 has a transverse cross-sectional shape similar to a query mark. A vertical portion 102 of the rail 100 is riveted to the outer side skin 110 before the container is fully assembled and before the interstitial spaces 111 are completely filled with foam 115. As is evident from figure 1, an upper portion 104 of the rail 100 is oriented outwards of the container in order that both sides of this portion 104 are accessible for riveting the outer skin of a roof panel 118 to the rail 100 after the rail is riveted to the outer side skin 110.

However, the above container has a number of disadvantages. The fixing of rivets 120 is labour intensive and time consuming and apertures necessary for the rivets 120 tend to weaken the roof panel 118. As a result, the roof panel 118 may tear or buckle allowing the ingress of water into the interstitial space 111 and thereby destroy the insulating property of the foam 115. Moreover, the rivet holes tend to elongate as the container flexes, again allowing the ingress of water. In

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addition, the protruding upper portion 104 of the rail 100 is liable to damage in collision with other containers during the stacking of containers. Despite these difficulties, there is a strong prejudice in the art towards the riveting of panels to rails, in particular, in the case of aluminum rails and panels.

5

It is an object of this invention to provide an improved top rail for an insulated freight container and an improved method of manufacturing such a freight container.

10 According to one aspect of this invention there is provided a top rail for an insulated double-skinned freight container, the rail being for forming a junction between an outer skin of a side wall and an outer skin of a roof panel of the container, wherein the rail comprises a first portion for attachment to the outer skin of the side wall, an angled second portion at a first obtuse angle to the first portion
15 and adapted to be angled inwardly of the container in use and a third portion for attachment to the outer skin of the roof panel angled at a second obtuse angle to the angled second portion so that the third portion is substantially perpendicular to the first portion, the rail being adapted to be welded to at least one of the outer skin of the side panel and the outer skin of the roof panel, characterised by a first return
20 member arranged to be substantially perpendicular to the third portion at a location of the third portion remote from the angled second portion and a second return member arranged substantially perpendicular to the first portion at a location remote from the angled second portion, said first and second return members being disposed

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inwardly of the container in use to reduce flexing in a vertical direction and axial twisting of said rail and wherein the rail is formed of aluminium.

Conveniently the first obtuse angle is between 140 degrees and 160 degrees.

5

According to a second aspect of this invention, there is provided an insulated freight container having a top rail, the top rail forming a junction between an outer skin of a side wall and an outer skin of a roof panel of the container, wherein the rail comprises a first portion for attachment to the outer skin of the side wall, an angled second portion which is angled at a first obtuse angle to the first portion and angled inwardly of the container and a third portion attached to the outer skin of the roof and angled at a second obtuse angle to the angled second portion so that the third portion is substantially perpendicular to the first portion and the rail is welded to at least one of the outer skin of the side wall and the outer skin of the roof panel, characterised by a first return member arranged to be substantially perpendicular to the third portion at a location of the third portion remote from the angled second portion and a second return member arranged substantially perpendicular to the first portion at a location remote from the angled second portion, said first and second return members being disposed inwardly of the container in use to reduce flexing in a vertical direction and axial twisting of said rail and wherein the rail and the outer skin of the roof panel and/or the outer skin of the side panel are of aluminium.

20

Conveniently, the first obtuse angle is between 140 degrees and 160 degrees.

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According to a third aspect of this invention there is provided a method of manufacturing an insulated double-skinned freight container comprising the steps of:

- a) providing an outer and inner skin of a floor panel,
- b) locating the inner skin of the floor panel parallel to and spaced from the
5 outer skin by foam spacing stanchions,
- c) injecting foam between the inner and outer skins,
- d) providing outer skins and inner skins of side panels, locating the inner skins parallel to the respective outer skins and spaced from them by foam spacing stanchions, inserting foam between the inner and outer skins,
- 10 e) fixing an edge of the side panels to the floor panel by a known method to form side walls of the container and filling joints between the floor panel and side panels with foam,
- f) providing aluminium top rails having a first portion for attachment to each outer skin of each side wall respectively, an angled second portion at a first
15 obtuse angle to the first portion and adapted to be angled inwardly of the container in use and a third portion for attachment to an outer skin of a roof panel, angled at a second obtuse angle to the angled portion so that the third portion is substantially perpendicular to the first portion, and having a first return member arranged substantially perpendicular to the third portion at a
20 location of the third portion remote from the angled second portion and a second return member arranged substantially perpendicular to the first portion at a location remote from the angled second portion, said first and second return members being disposed inwardly of the container in use to reduce flexing in a vertical direction and axial twisting of said rail.

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- g) riveting said top rails to the outer skins of the side walls respectively, fixing with a known method an inner skin of the roof panel to the inner skins of the side walls respectively,
- h) welding an outer skin of the roof panel to the third portion of the top rail and
- 5 filling the space between the inner and outer skins of the roof panel with foam, wherein said return members are located in said foam and substantially prevent flexing of the rail in a vertical direction and axial twisting of said rail.

10 The rail of the present invention has the advantage of providing added strength and providing greater protection to the top rail from impact damage than rails of the prior art since the rail has no protruding portion. The top rail of the invention also has a smaller total cross section area than the rails of the prior art, but with the material concentrated where the greatest strength is required, i.e. on the

15 angled section. The use of a welded joint also avoids weakening the outer skin by riveting, and reduces the likelihood of the ingress of water into the insulation foam.

The invention will now be described by way of example with reference to the accompanying drawing in which ;

20 Figure 1 shows a prior art transverse cross-section of a top rail installed in a container,

Figure 2 shows a transverse cross-section of a top rail according to the invention, installed in a container,

Figure 3 shows a perspective view of the top rail of Figure 2 installed in a

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container,

Figure 4 shows a transverse cross-section of an alternative embodiment of the top rail according to the invention installed in a container,

Figure 5 shows an enlarged view of a transverse cross-section of the top rail
5 of Figures 2 & 3, and

Figure 6 shows an enlarged view of a transverse cross-section of the top rail of Figure 4.

In the figures like reference numerals denote like parts.

10 An aluminium top rail 1 shown in transverse cross-section in Figure 2 has a first vertical portion 2, a second angled portion 3 angled inwards of the container in use at an angle α of 150 degrees to the first portion and third horizontal portion 4 connected at an angle β of 120 degrees of the angled portion 3 and oriented at right angles to the vertical portion 2. The first, second and third portions 2, 3, 4 of the
15 rail 1 thereby form a chamfered right angle. The third portion 4 is provided with a return portion 5 connected by an edge of the return portion 5 to an edge of the third portion 4 remote from the second angled portion 3, the return portion 5 being at right angles to the third portion 4 and inward of the container in use.

20 The vertical portion 2 is provided with a web 6 perpendicular to the vertical portion 2 and located on the vertical portion 2 proximate a junction between the vertical portion 2 and the angled portion 3 and inward of the container in use.

As can be seen in the enlarged drawings of figures 5 or 6, the vertical

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portion 2 is further provided with lower, median and upper horizontal ribs 7, 8, 9, at upper and lower edges of the portion 2 and substantially along a median line of the portion 2 on an outer surface of the rail 1. The inner surface of the vertical section 2 is provided with a cut-away portion 10 extending substantially from a position opposite the lower rib 7 to a position opposite the median rib 8, for receiving an outer skin 11 of a side panel 12.

The third portion 4 may also be provided with a longitudinal bead 13, raised above an outer surface of the portion 4 at a junction between the portion 4 and the angled portion 3.

In the manufacture of a freight container using the top rail 1 of the invention, the floor and side panels are constructed from inner and outer skins 16, 11 with foam 15 in the interstitial space between the skins in a manner known per se, the inner and outer skins being placed parallel with each other, separated by foam stanchions and the interstitial space being injected with foam 15 so that the inner and outer skins 16, 11 are held together by the foam 15 when the foam sets. The top rail 1 is riveted to the outer skin 11 of the side panel 12, the outer skin 11 of the side panel 12 being accommodated in the cut-away 10 in the inner surface of the vertical section 2. An inner skin 17 of the top panel 14 is attached to the inner skin 16 of the side panels in a known manner and the outer skin 18 is welded to the top rail 1 by a weld bead 20 or with an edge of the outer skin 18 abutting the longitudinal bead 13 where present, secured by a weld bead 19, with the outer skin 18 partially overlapping the horizontal section 4. The interstitial space between the outer and

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inner skins 18, 17 of the top panel 14 is injected with foam 15 so that the return portion 5 of the top rail 1 and the web 6 are embedded in the set foam 15.

Although it is normally more efficient to weld the top panel 14 to the rail 1,
5 it will be understood that the outer skin of the top panel 14 could be riveted to the rail 1 and the outer skin 11 of the side panel 12 welded to the rail 1, or both panels 12 and 14 could be welded to the rail 1. Instead of welding, a suitable adhesive may be used.

10 The return section 5 and the web 6 impart strength to the rail 1 in axial twisting so that the rail 1 according to the invention is stronger than the rails of the prior art in relation to flexing in a vertical direction and equally strong in respect of axial twisting. The web 6 also forms a convenient boundary for an initial insertion of foam within the side wall before the top panel is assembled to the rail, and a final
15 foaming of the corner between the side wall and the top panel. In addition, the web 6 facilitates molding in the manufacture of the rail 1.

A second embodiment of the invention is shown in the transverse cross-section in Figure 4, in this embodiment the portion 4 is not provided with a bead
20 and the weld bead 20 overlaps the edge of the outer skin of the top panel, the top panel partially overlapping the portion 4 of the rail 1.

The strengthening ribs 7,8,9 of the vertical portion 2 provide strength against side impacts and the angled portion 3 of the rail assists in glancing off impacting

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containers in collisions during stacking.

- The total cross-sectional area of the rail of the invention is less than the total cross-section area of rails of the prior art and therefore less material is used in the
- 5 construction of the rail and yet the strength is concentrated in the angled section where damage is mostly likely to occur. Additional strength is provided by the strengthening ribs 7,8,9 on the vertical section 2 and by the web 6 and the return portion 5.

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CLAIMS:

1. A top rail (1) for an insulated double-skinned freight container, the rail being for forming a junction between an outer skin (11) of a side wall and an outer skin (18) of a roof panel of the container, wherein the rail comprises a first portion (2) for attachment to the outer skin (11) of the side wall, an angled second portion (3) at a first obtuse angle (α) to the first portion and adapted to be angled inwardly of the container in use and a third portion (4) for attachment to the outer skin (18) of the roof panel angled at a second obtuse angle (β) to the angled second portion (3) so that the third portion (4) is substantially perpendicular to the first portion, the rail being adapted to be welded to at least one of the outer skin of the side panel and the outer skin of the roof panel, characterised by a first return member (5) arranged to be substantially perpendicular to the third portion (4) at a location of the third portion remote from the angled second portion (3) and a second return member (6) arranged substantially perpendicular to the first portion (2) at a location remote from the angled second portion (3), said first and second return members (5,6) being disposed inwardly of the container in use to reduce flexing in a vertical direction and axial twisting of said rail and wherein the rail is formed of aluminium.
2. A top rail as claimed in any of the preceding claims, wherein the first obtuse angle (λ) is between 140 degrees and 160 degrees.
3. An insulated freight container having a top rail (1), the top rail forming a junction between an outer skin (11) of a side wall and an outer skin (18) of a roof panel of the container, wherein the rail comprises a first portion (2) for attachment

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to the outer skin of the side wall, an angled second portion (3) which is angled at a first obtuse angle (α) to the first portion (2) and angled inwardly of the container and a third portion (4) attached to the outer skin of the roof and angled at a second obtuse angle (β) to the angled second portion (3) so that the third portion (4) is substantially perpendicular to the first portion (2) and the rail (1) is welded to at least one of the outer skin (11) of the side wall and the outer skin (18) of the roof panel, characterised by a first return member (5) arranged to be substantially perpendicular to the third portion (4) at a location of the third portion remote from the angled second portion (3) and a second return member (6) arranged substantially perpendicular to the first portion (2) at a location remote from the angled second portion (3), said first and second return members (5,6) being disposed inwardly of the container in use to reduce flexing in a vertical direction and axial twisting of said rail and wherein the rail and the outer skin of the roof panel and/or the outer skin of the side panel are of aluminium.

4. An insulated freight container as claimed in claim 3, wherein the first obtuse angle (γ) is between 140 degrees and 160 degrees.

5. A method of manufacturing an insulated double-skinned freight container comprising the steps of:

- a) providing an outer and inner skin of a floor panel,
- b) locating the inner skin of the floor panel parallel to and spaced from the outer skin by foam spacing stanchions,
- c) injecting foam between the inner and outer skins,

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- d) providing outer skins (11) and inner skins (16) of side panels, locating the inner skins parallel to the respective outer skins and spaced from them by foam spacing stanchions, inserting foam (15) between the inner and outer skins,
- 5 e) fixing an edge of the side panels to the floor panel by a known method to form side walls of the container and filling joints between the floor panel and side panels with foam,
- f) providing aluminium top rails (1) having a first portion (2) for attachment to each outer skin (11) of each side wall respectively, an angled second portion (3) at a first obtuse angle (α) to the first portion (2) and adapted to be angled inwardly of the container in use and a third portion (4) for attachment to an outer skin (18) of a roof panel, angled at a second obtuse angle (β) to the angled portion (3) so that the third portion (4) is substantially perpendicular to the first portion (2), and having a first return member arranged
- 10 substantially perpendicular to the third portion at a location of the third portion remote from the angled second portion (3) and a second return member (6) arranged substantially perpendicular to the first portion (2) at a location remote from the angled second portion, said first and second return members (5,6) being disposed inwardly of the container in use to reduce
- 15 flexing in a vertical direction and axial twisting of said rail.
- 20 g) riveting said top rails (1) to the outer skins (11) of the side walls respectively, fixing with a known method an inner skin (17) of the roof panel to the inner skins (16) of the side walls respectively,
- h) welding an outer skin (18) of the roof panel to the third portion (4) of the top

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rail (1) and filling the space between the inner and outer skins (17,18) of the roof panel with foam (15), wherein said return members (5,6) are located in said foam (15) and substantially prevent flexing of the rail (1) in a vertical direction and axial twisting of said rail.

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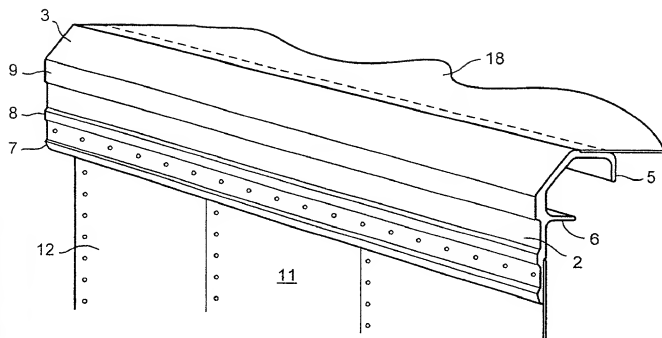


FIG. 3

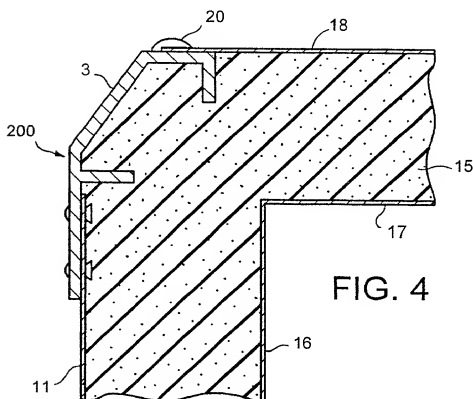
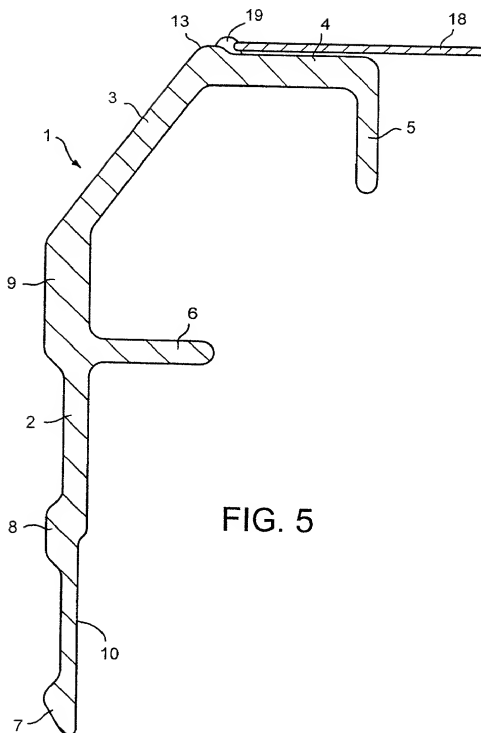
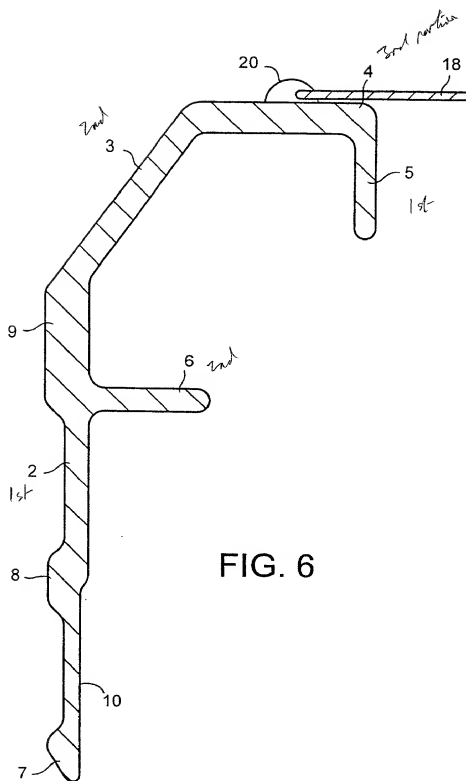


FIG. 4

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NOTE: Each inventor must be identified by full name, including the family name, and at least one given name without abbreviation together with any other given name or initial, and by his/her residence, post office address and country of citizenship. 37 C.F.R. Section 1.63(a)(3).

NOTE: Inventors may execute separate declarations/oaths provided each declaration/oath sets forth all the inventors. Section 1.63(a)(3) requires that a declaration/oath, inter alia, identify each inventor and prohibits the execution of separate declarations/oaths which each sets forth only the name of the executing inventor. 62 Fed. Reg. 53,131, 53,142, October 10, 1997,

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